CLAIMS

What is claimed is:

1. A method for controlling performance of a computer system, comprising controlling a power supply to provide a desired supply for operating an electronic device based on an evaluation of a monitored parameter against a performance criteria for the electronic device, wherein the performance criteria comprise a relationship between temperature and power input for the electronic device.

2. The method of claim 1, comprising obtaining the monitored parameter to determine an operating temperature of the electronic device.

3. The method of claim 1, comprising sensing the monitored parameter on a processor for the electronic device.

4. The method of claim 1, comprising evaluating the monitored parameter against the performance criteria, wherein the relationship is based on an inverse relationship between operating temperature and operating speed and a direct relationship between operating voltage and operating speed.

5. The method of claim 4, wherein evaluating the monitored parameter against the performance criteria comprises analyzing the monitored parameter with a logic

assembly configured to determine the desired supply based on the monitored parameter, wherein the logic assembly comprises logic based on the relationship.

6. The method of claim 4, wherein evaluating the monitored parameter against the performance criteria comprises searching a control table for the desired supply based on the monitored parameter, wherein the control table comprises a plurality of data sets based on the relationship.

7. The method of claim 4, wherein evaluating the monitored parameter against the performance criteria comprises solving a power equation for the desired supply, wherein the power equation is a function of the monitored parameter and is derived from the indirect relationship and the direct relationship.

8. The method of claim 1, comprising providing a control signal configured to adjust the power supply to the desired supply, wherein the control signal is based on the evaluation.

9. The method of claim 1, wherein controlling the power supply to provide the desired supply comprises adjusting the desired supply to substantially maintain a desired operating speed as the monitored parameter indicates a changing operating temperature of the electronic device.

10. The method of claim 1, wherein controlling the power supply to provide the desired supply comprises adjusting the desired supply to minimize power consumption and to maintain a relatively consistent computing performance as the monitored parameter indicates a changing operating temperature of the electronic device.

11. The method of claim 10, wherein adjusting the desired supply comprises reducing the desired supply as the monitored parameter indicates a decreasing operating temperature of the electronic device.

12. The method of claim 1, comprising programming a programmable power supply to adjust the desired supply as the monitored parameter indicates a changing operating temperature of the electronic device.

13. The method of claim 1, comprising integrating a temperature responsive control assembly into the computer system, wherein the temperature responsive control assembly is configured to adjust the desired supply for a central processor based on the monitored parameter, and the monitored parameter is obtained from a temperature sensor.

14. A method for controlling operational parameters of a computer system, comprising:

obtaining a sensor reading to determine an operating temperature;

analyzing the sensor reading based on performance relationships for the computer system, the performance relationships comprising an inverse relationship between temperature and performance and a direct relationship between voltage and performance;

determining a desired voltage level for the computer system based on a desired performance; and

providing a control signal configured for adjusting a power supply for the computer system to the desired voltage level.

15. The method of claim 14, comprising sensing the operating temperature on a processor for the computer system.

16. The method of claim 14, comprising converting the sensor reading to provide the operating temperature.

17. The method of claim 14, comprising analyzing the sensor reading with a digital logic device configured to determine the desired voltage level at the sensor reading, wherein the digital logic device has logic derived from the performance relationships.

18. The method of claim 14, comprising analyzing the sensor reading with a control program configured to determine the desired voltage level at the sensor reading,

wherein the control program has analysis routines derived from the performance relationships.

19. The method of claim 14, comprising adjusting the power supply to relatively consistently provide the desired performance as the operating temperature varies during operation of the computer system.

20. The method of claim 14, comprising adjusting the power supply to minimize power consumption for the desired performance as the operating temperature varies during operation of the computer system.

21. The method of claim 20, wherein adjusting the power supply comprises reducing the desired voltage level as the operating temperature decreases during operation of the computer system.

22. A method of performance control for an electronic device having a processor, comprising providing a control assembly configured for monitoring an operating temperature and responsively adjusting an operating voltage as the operating temperature varies in the electronic device, wherein the control assembly has control criteria comprising a desired operating speed, an inverse relationship between operating temperature and operating speed, and a direct relationship between operating voltage and operating speed.

23. The method of claim 22, comprising providing a sensor to determine the operating temperature.

24. The method of claim 22, comprising coupling the control assembly to the processor.

25. The method of claim 22, comprising coupling the control assembly to a sensor on the processor for obtaining the operating temperature.

26. The method of claim 22, comprising providing a logic unit configured to determine a desired operating voltage based on the control criteria.

27. The method of claim 22, comprising providing a control program configured to determine a desired operating voltage based on the control criteria

28. The method of claim 22, comprising relatively consistently maintaining the desired operating speed as the operating temperature varies in the electronic device.

29. The method of claim 22, comprising minimizing power consumption at a relatively consistent operating speed of the processor as the operating temperature varies in the electronic device.

30. The method of claim 22, comprising providing a programmable power supply configured to responsively adjust the operating voltage as the operating temperature varies in the electronic device

31. A system for minimizing power consumption of digital logic, comprising:

a sensor signal configured for determining temperature of the digital logic;

a control module having control criteria for evaluating the sensor signal, wherein the control criteria comprise operating relationships for the digital logic comprising an inverse relationship between temperature and computing performance and a direct relationship between voltage and computing performance; and

a control signal configured for adjusting a power supply for the digital logic to minimize power consumption and to provide a desired computing performance as the temperature varies for the digital logic.

32. The system of claim 31, comprising a temperature sensor configured to provide the sensor signal.

33. The system of claim 31, wherein the temperature sensor is positioned for monitoring temperature of a processor for the digital logic.

34. The system of claim 31, comprising an analog to digital converter configured for converting the sensor signal to units of temperature.

35. The system of claim 31, wherein the control module comprises a control program comprising the control criteria and a routine utilizing the control criteria for determining a desired operating voltage based on the sensor signal and the desired computing performance.

36. The system of claim 31, wherein the control module is coupled to a processor for the digital logic.

37. The system of claim 31, wherein the desired computing performance is a desired maximum operating speed.

38. The system of claim 31, comprising a programmable power supply configured to responsively adjust the voltage as the temperature varies to substantially maintain the desired computing performance.

39. A system for increasing mobile operating time for a portable computing device, comprising:

a sensor for monitoring an operating temperature;

control criteria for evaluating the operating temperature, wherein the control criteria comprise operating relationships for the portable computing device comprising an inverse relationship between operating temperature and processing speed and a direct relationship between operating voltage and processing speed; and

a programmable logic unit configured for adjusting operating voltage for the portable computing device to minimize power consumption while providing a desired processing speed as the operating temperature varies.

40. The system of claim 39, wherein the sensor comprises a thermistor.

41. The system of claim 39, wherein the sensor comprises a digital thermometer.

42. The system of claim 39, comprising a control program configured to calculate a desired operating voltage as a function of the operating temperature and based on the control criteria and the desired processing speed.

43. The system of claim 39, wherein the sensor is disposed on a processor for the portable computing device.

44. The system of claim 39, wherein the programmable logic unit is coupled to a power supply for the portable computing device.

45. The system of claim 39, wherein the programmable logic unit is coupled to a battery for the portable computing device.